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EXAMINER

HARPER, K

ART UNIT

PAPER NUMBER

2664

DATE MAILED:

06/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/620,821

Applicant(s)

CLOONAN

Examiner

Kevin C. Harper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-22 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 22 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Claim Objections

1. Claim 5 is objected to because "a" (second occurrence) should be removed. Appropriate correction is required.
2. Claim 22 is objected to because "cable modem" should be --cable modem termination system-- as shown in Figures 2 and 6.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 11 recites the limitation "the system" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 13 recites the limitation "the data monitor" in line 3 and "the data rate monitor" in line 4.
5. Claim 16 recites the limitation "the interface" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-2, 8-9 and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kilkki (US 6,081,505).

6. Regarding claims 1-2, Kilkki discloses a method for providing data packet congestion control (abstract, last five lines). The method comprises the steps of determining the particular service flow associated with a data packet and the flow rate of the particular service flow (Figure 1, step 44 and Figure 2), quantizing the data packet flow rate into at least one priority level (Figure 3, step 76), detecting the instantaneous buffer circuit depth (Figure 1, step 50), and processing the packet (Figure 1, steps 52 and 54) in response to the data packet flow rate, the data packet priority, and the current buffer circuit depth.

7. Regarding claim 8, the occupancy level of the buffer is detected (col. 7, lines 27-30).

8. Regarding claim 9, the priority level is stored in the cell header (Figure 3, step 78) and later read (Figure 9, step 113).

9. Regarding claim 13, Kilkki discloses an apparatus (Figure 2) for controlling the congestion of a buffer circuit (Figure 8). The apparatus comprises a combined data monitor and flow limiter (Figure 1, item 24) for outputting a control signal (Figure 8, PL of packet header) indicating the service flow's data rate (Figure 3, step 76; note: the priority level is proportional to the measured data rate) and a congestion controller (Figure 7, items 88 and 89) to control the rate at which a stream of packets enters a buffer.

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10. Regarding claim 14, the flow rate may be increased if the buffer is not full (Figure 6, steps 95-97).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kilkki (US 6,081,505).

11. Regarding claim 3, Kilkki discloses detecting an instantaneous buffer circuit depth (Figure 1, step 44). However, Kilkki does not disclose detecting an average value for the buffer depth. One skilled in the art would recognize that the average value of buffer depth shows the general buffer fullness over a give time period. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use an average value of buffer depth in the invention of Kilkki in order to determine if the buffer is becoming full too often, indicating that a communication system is often congested as opposed to the communication system being occasionally congested.

12. Regarding claim 10, Kilkki does not disclose reading a header to determine an associated service flow. One skilled in the art would recognize that a UNI (Figure 2) is typically connected to several users, in which case, the UNI would read the cell header to determine how to process a received cell (i.e. routing, scheduling, etc.). Therefore, it would have been obvious to one skilled

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in the art at the time the invention was made to determine an associated service flow by reading the cell header in the invention of Kilkki as a matter of design choice.

13. Regarding claim 15, Kilkki does not disclose that the data rate monitor is coupled to several cable modems. One skilled in the art would recognize that cable modems are common communication devices. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to couple a data rate monitor to several cable modems in the invention of Kilkki as a matter of design choice in order to provide congestion control for data transmitted from a cable modem system.

Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorman et al. (US 6,137,793) in view of Kilkki (US 6,081,505).

14. Regarding claims 16-22, Gorman discloses a cable modem interface (Figure 6) for interfacing several cable modems to a cable modem termination system (Figure 3). The interface has a downstream data path (Figure 3, downstream channel) comprising a modulator (Figure 4, item 408). The interface has an upstream data path (Figure 3, upstream channel) comprising a demodulator (Figure 5, item 504). However, Gorman does not disclose a first data throughput monitor nor a first flow limiter. One skilled in the art would recognize that a cable modem head end preferably has a data rate monitor and a data flow limiter in order to prevent an excessively high data transmission from a connected network (i.e. Internet) to a particular cable modem. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have a first data throughput monitor and a first flow limiter in the invention of Gorman. Further, Gorman does not disclose a second data throughput monitor, a second flow limiter, nor a congestion controller. Kilkki discloses an apparatus (Figure 2) for controlling the congestion of a

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buffer circuit (Figure 8). The apparatus comprises a combined data monitor and flow limiter (Figure 1, item 24) for outputting a control signal (Figure 8, PL of packet header) indicating the service flow's data rate (Figure 3, step 76; note: the priority level is proportional to the measured data rate) and a congestion controller (Figure 7, items 88 and 89) to control the rate at which a stream of packets enters a buffer. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide congestion control in the invention of Gorman in view of Kilkki in order to provide congestion control at the cable system head end (Gorman, Figure 1).

Allowable Subject Matter

15. Claims 4-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. Claims 11-12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Harper whose telephone number is 703-305-0139. The examiner can normally be reached weekdays, except Wednesday, from 8:00 AM to 6:30 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached at 703-305-4366. The fax phone number for Technology Center (TC) 2600 is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office for TC 2600 at 703-306-0377.

Kevin C. Harper



June 4, 2001



HUY D. VU
PRIMARY EXAMINER